



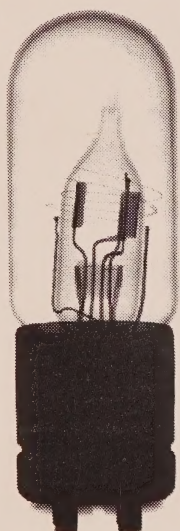
the Grid Leak

*Publication of the Houston
Vintage Radio Association*

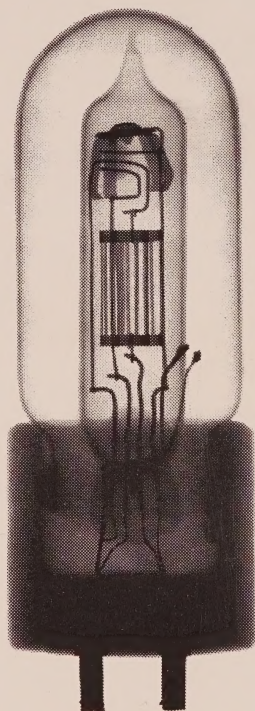
Volume 13

August 1991

Number 7



S-13



D-21

Sodiion Detectors

Houston Vintage Radio Assn.

Founded 1978

1990-1991 Club Officers

President:

Bill Werzner
11402 Endicott
Houston, TX 77035
(713) 721-2242

Vice President:

Dewayne Dickey
9658 Beverly Hill
Houston, TX 77063
(713) 782-5509

Secretary:

Richard Collins
8722 Reamer St.
Houston, TX 77074
(713) 778-0271

Treasurer:

Sam Juliano
15718 Falmouth Drive
Houston, TX 77059
(713) 486-8726

Historian:

Wendell Wyborny
8703 Windrock
Houston, TX 77040
(713) 466-6507

At Large Position 1:

Ben Koudelka
16534 DeLozier
Houston, TX 77040
(713) 466-7768

At Large Position 2:

Arnie Sanchez
9615 Rockhurst
Houston, TX 77080
(713) 999-5862

Grid Leak Editor:

Gene Tognacci
12507 Nova Dr.
Houston, TX 77077
(713) 496-2358

Honorary Members:

John F. Rider (deceased)
H. deForest Ralph, Jr.

The Houston Vintage Radio Association is a non-profit organization seeking to preserve the history of the development of wireless communication by encouraging the acquisition, restoration, preservation and exhibition of antique wireless and radio apparatus, and by encouraging the preservation of original records pertaining to the history and development of wireless and radio communication and broadcasting.

To keep members advised of HVRA activities, the club publishes a monthly newsletter, *The Grid Leak*. The newsletter includes articles on subjects of historical interest to collectors, news of club activities, restoration tips, and want ads. Ads are free to members. Published monthly, eleven issues per year: 5 major editions and 6 minor editions.

For local membership the cost is \$15 per year; for membership beyond a 75 mile radius of Houston, the cost is only \$10 per year. Write to HVRA Membership, P.O. Box 31276, Houston, TX 77231-1276 to become a member of HVRA.

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Aug. 6th Meeting

The August Program will feature two video tapes presented by Bob Wood. Titles are "Behind the Dial" and "Collecting Antique Radios" Additional information was not available at presstime.

The HVRA meeting will be held August 6th at the Marriott Astrodome, beginning at 7pm.

New Members

Leo Earley, Waco TX
Bob and Ophelia Nicholson,
Topeka, KS
Matthew Nelson, Baycliff, TX
Carl Moore, Houston

Cover Photo

X-Ray photo of two Sodion detector tubes, S-13 and the D-21. Both tubes were manufactured with a frosted outer glass enclosure, hiding the appearance of the inner structure, see story on page 13.

Notes

From the Editor

by Gene Tognacci

NEW RADIO MUSEUM

We received a note from HVRA members Frank and Mary Rasada who have purchased a 1920's Masonic Temple in Multomah, Oregon. The Rasada's will use the location to house their radio collection and as a meeting place for the Northwest Vintage Radio Society.

The museum will be open for radio collectors only, but will be available to the public during club functions and for private field trips for the local Portland school systems. Tentative date for completion of the initial phase of set up is early 1992.

The museum corporation is non profit and is supported by Mary and Frank, along with donations. To finance the operation they are going to be offering items of interest to radio collectors for sale. (The first of which is the beautiful Zenith Watch, see back of this issue.)

In their letter, they did not solicit donations or contributions, however, I am sure they can use whatever help you would like to provide. Their address is Northwest Vintage Radio Museum 9453 E. Arkansas Street Bellflower, CA 90706.

ET CETERA

I'm excited about the crystal DX contest that Durrell Roth has been organizing. As we get closer to the contest, I hope some of our readers will share some Crystal set tips, ideas and designs with us all.

If you are currently a broadcast band dx'er, you need to know about one of the most phenomenal antennas made for broadcast receivers. The Select A Tenna AM Radio antenna is a circular drum that sits beside the antenna in your radio and uses no batteries or connections.

When you locate a weak signal you wish to hear, the tuning knob of the Select A Tenna is adjusted to the same frequency as tuned to on the radio.

This antenna really brings in signals. I have heard KFI, Los Angeles; WGN, WLS, Chicago; WLW, Cincinnati (I was able to "null out" local KSEV by rotating the antenna) WHB, Kansas City and dozens of other stations. During the daytime, I am able to get a listenable signal on WBAP Dallas, KLBJ, Austin and several other out of town stations.

The antenna costs about \$50 and is manufactured by Intensitronics Corp. Box 562, Hales Corners, WI 53130. With more and more interference creeping into the AM band. No dx'er should be without this nifty little gadget.

Thanks to those who contributed to this issue: Lance Borden, Bill Kendrick, Gordon Rolston and Durrell Roth. Special thanks to Dave Moore who is, in many ways, more responsible for the newsletter getting to you than the editor.

Crystal Set DX Contest

by Durell Roth

CRYSTAL SET DX LISTENING CONTEST

In December 1991, HVRA will hold it's first annual crystal set DX (distance) listening contest. The contest is open to all current HVRA members and is being held to promote interest in collecting and using all kinds of crystal receivers.

Participants compete for the largest aggregate distance between each station and the receiving set. To encourage participation and skillful operating, there will be no restrictions placed on the kind of crystal set, aerial length or height, or type of detector used.

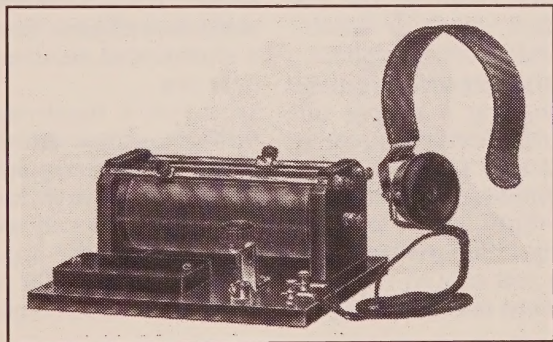
Winning entries will be chosen, by a contest committee, based on the total distance of verified reception reports. The first place winner will receive a one year free membership in HVRA and will be featured in a Grid leak article, with photos,

describing the equipment and aerial system. the second place winner will be featured in an article describing the receiving system and published in the Grid leak.

In case of a tie, the committee will choose a winner based on the technical merit of the receiving system from information supplied by the operator and the total aggregate distance logged in the contest.

Come join the fun and capture some of the awe and excitement felt by radio's pioneers as they listened on those long cold winter nights... enjoy the adventure of long-distance crystal set listening.

Complete details and a contest application form will be included in the October Grid leak.



1920 CRYSTAL RADIO

By Lance Borden

The year was 1919 and Dr. Frank Conrad was just beginning to broadcast from a station in his garage in Pittsburgh. the station was picked up and commercialized by Westinghouse and became the first commercial broadcast station, KDKA. Many others were to follow and radio broadcasting began in America.

Most early listeners built their own radios in the form of crystal sets. The set described here is an accurate reproduction of one of those home made radios of 1920.

ASSEMBLY

1. Cut out ends of salt box and punch two holes at either end 1/2" from the ends as shown. These are used for securing the coil wire.
2. Secure the coil wire in one set of holes leaving a 2" pig tail. Wind approximately 140 turns of the #22 A.W.G. wire on the salt box, making sure that the turns are tight, close and not overlapping. Secure the other end of the coil wire in the other two holes and leave a 9" pigtail.
3. Mark the board for screws and drill 3/32" pilot holes in locations indicated. Attach the coil with two screws and washers as shown. Apply one coat of shellac to the coil and board. Allow to dry.
4. Sand the coating off of the coat hanger wire and bend a loop in each end at right angles, (see illustration). Sand the enamel off a 2" piece of coil wire and attach it to the coat hanger slider with solder. This is the tuning coil contact. Bend the coat hanger slider as shown and attach to the board with a screw and between two washers. Sand the enamel off the area of the coil that the slider contacts, as show.
5. The antenna, ground and phones connectors are 1/2" #6 round head brass wood screws and two washers. Install these as shown and secure the crystal detector.
6. The top view shows where the wires go. The set can be wired with almost any kind of wire including the coil wire, but be sure to sand the enamel off the end of this wire if it is used or it will not conduct signals.

OPERATION

1. Connect the set to a good outside antenna 50 to 100 feet in length. The Radio Shack Antenna kit works very well for this. The ground connection should be connected to a cold water pipe or ground rod, also available from Radio Shack.

2. Connect a good high impedance headset, (at least 2,000 ohm). The ones recommended in the parts list work well. Stereo headphones will not work.

3. Set the tuning slider in the middle of the coil and begin dragging the cat's wisher over the surface of the crystal. You will find a few sensitive spots where a local station will come in loudest. After finding a sensitive spot, tune the slider for best reception.

Don't be surprised if you hear two stations at one time. Crystal sets aren't very selective.

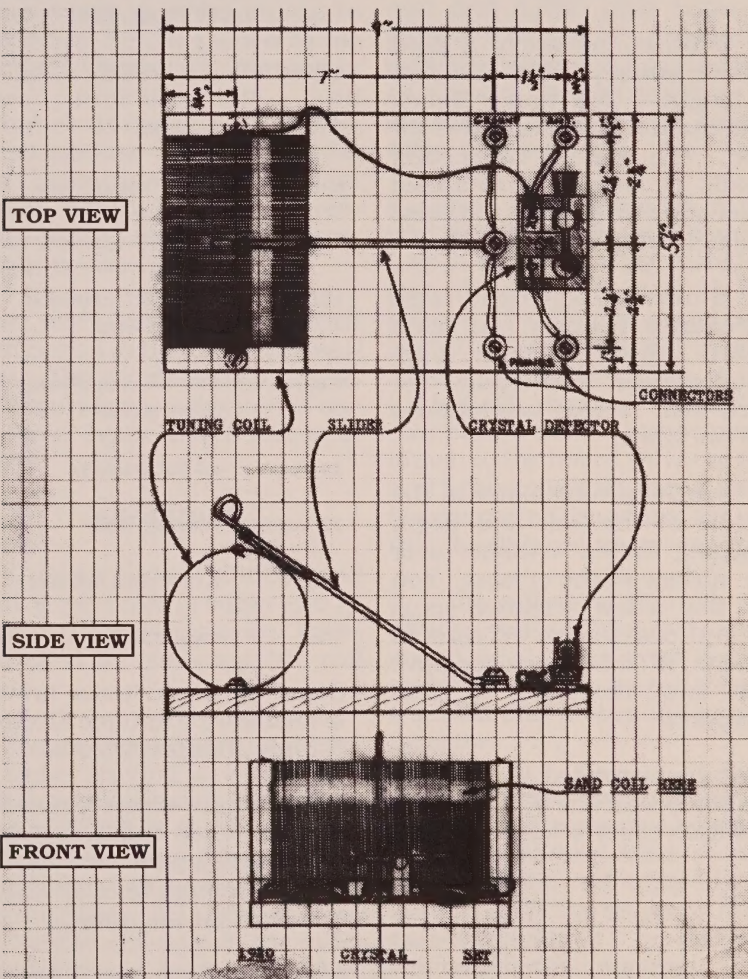
PARTS LIST FOR 1920 CRYSTAL SET

QUANTITY	ITEM
1 ea	Salt Box
8-1/2" section	coathanger wire
1 ea	1/2" X 5-1/2" X 9" board
125 feet	#22 AWG enameled magnet wire
8 ea.	1/2" #6 roundhead brass screws
14 ea.	#6 flat washers
12" section	hookup wire
1 ea.	2,000 ohm headset
1 ea.	crystal detector

Some of these items are also available from Antique Electronic Supply, Tempe, Arizona.

I hope you enjoy your 1920 Crystal Set as much as we have. Ours picks up nine stations and is loud enough to hear with the headsets on the table.

(reprinted from past Grid Leak)



Rider's Manual

By Bill Kendrick

STOP RIDER'S PAGES FROM "RIDIN' UP"

Have you noticed how the first several pages of Rider's manuals seem to be wadded up and torn? The type of binding that allows pages to be added, causes this problem.

As seen in fig. A, the binding is wider than the text, causing the stiff cover to press in on the outer edges of the top pages. As the book flexes, it ratchets these pages into the wedge shaped cavity next to the binder until this cavity is filled with wadded pages that resist the rearward movement of additional pages.

The solution is to smooth out the wadded pages and fill in the cavity. I find that a Newsweek or similar sized magazine folded into wedge shape (fig B) and placed in this cavity presses the wadded pages back and prevents further deterioration of the pages.

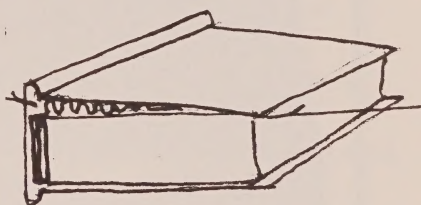


Fig. A

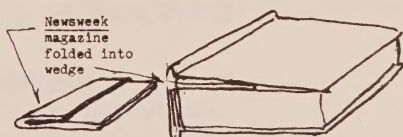
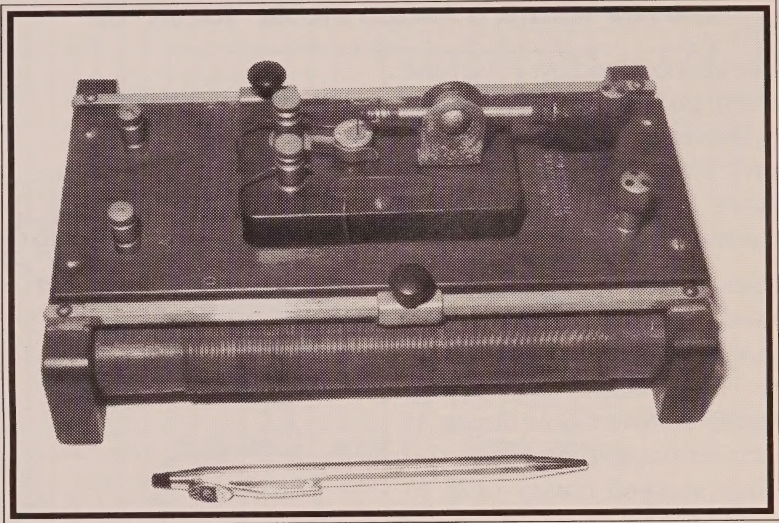


Fig. B

Radio Spotlight



GUNDLACH Crystal Aerophone

1923-1924

Manhattan Optical Co. Rochester, NY

Two different models were manufactured differing only in size. The more common set (shown here) was the shortest, 8" in length. (Micheal Payne)

Calendar Aug/Sept

AUGUST

- 3 The assistant traffic manager at Marconi Wireless Telegraph Co. proposes the concept of a "radio music box"-using wireless to broadcast music. His name was David Sarnoff.- 1923
- 6 First full-length motion picture with synchronized sound (music) from Warner Brothers debuts-Don Juan starring John Barrymore.-1926
- 12 Parachute jumper equipped with NBC 2 pound, 2 watt transmitter pack leaps from a plane over Roosevelt field "to test the possibilities."-1929
- 13 U.S. Government approved the licensing of radio operators and transmitting stations.-1912
- 20 Radio station 8MK started by The Detroit News, it later became WWJ-1920
- 22 All broadcasting networks placed on 24-hour basis because of growing crisis in Europe-1939
- 26 Lee de Forest born-1873
- 27 First dial telephones come into use-1896
- 28 First commercial sponsorship of a radio broadcast. \$100 for 10 minutes on WEAF, New York-1922

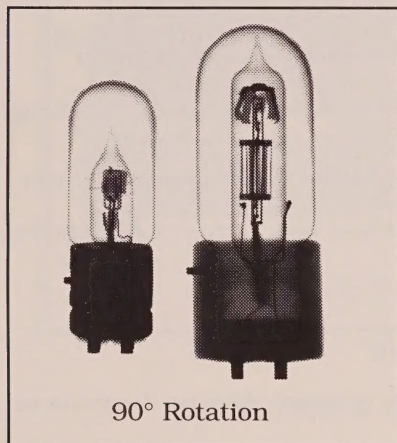
SEPTEMBER

- 9 NBC organized as a service of RCA with 24 stations-1926
- 18 CBS goes on the air with 16 stations-1928. (ed. note: while none of the original NBC stations can claim continuous affiliation, two original CBS network stations, KMOX, St. Louis and WCAU, Philadelphia, continue to be associated with the network.)
- 27 WBZ started at Springfield, MA-1921
- 28 FCC authorizes radio facsimile tests on regular broadcast channels during early morning hours-1937
- 30 Mutual Broadcasting System starts as a cooperative, four station hook-up-1934

Sodion Detectors

by David Moore

The Sodion detector arrived on the market in 1923, developed by Dr. H.P. Donle, chief engineer of the Connecticut Telephone and Electric Co.



The predecessor to the S-13 and D-21 (radiograph on front cover) were developed over a number of years in an attempt not to infringe on the patents of Fleming and deForest. Donle produced several early tubes, Type A and Type C as example, which incorporated an anode in close contact with the outer surface of the glass envelope which contained the grid and filament. The operation reportedly was by virtue of the electrolytic conduction through the glass bulb when it was heated by the energy radiated from the filament.

The purpose of the outer glass enclosure was for temperature stability which in turn gave better electrical performance.[1]

This design was utilized in the S-13 and D-21, but not before going through several developmental evolutions. Prior to the introduction of the S-13 (Oct. 1923), Dr. Donle designed a tube which used liquid sodium as an anode. No tube designation was stated on this radical tube design, giving credence to the fact that the tube was never placed into production.

The S-13 detector had nonstandard base requiring the user to purchase a special adapter sold by Connecticut Tel. and Elec. Co. The filament current was 0.24 amps at a voltage of 3.8. While the filament was made of tungsten and wired in series with the heater, a portion of the filament power was used to heat the inside glass tube envelope.

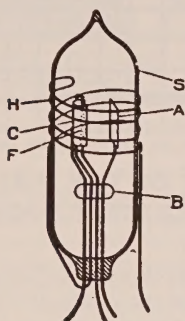
The D-21 detector was soon introduced in the fall of 1924. Designed with a standard base and a tantalum filament, it operated at 0.25 amps and 5 volts which included the heater. Unlike the S-13, the D-21 could be made to oscillate.

QST rated the Sodion tubes in the December 1924 issue:

The sodion tubes are

intended for detection only. Both the S-13 of last year [1923] and the D-21 of this year [1924] depend on the presence of sodium for their sensitivity. Other metals, such as potassium, caesium or rubidium can be made to serve the same purpose, but sodium is comparatively cheap and easy to secure.

This scheme serves the same purpose as the small amount



Internal Construction of Tube

- A—Anode or Plate**
- B—Glass Bead**
- C—Collector**
- F—Filament**
- H—Heater Coil**
- S—Glass Envelope**

of gas which is left in the usual "soft detector" tube. However, the action is said to be quite different and the tube curves do not have the "kinks" which provide the sensitivity of the gas tube.

In other ways the two tubes are not at all alike. The S-13 was a non-oscillating tube, with a non-standard base, also it was so designed that it required slight changes in the wiring standard receiving sets.

The new D-21 has a standard base, can be made to

oscillate smoothly and easily, and is so designed that no wiring changes are needed — it can be substituted for a "gas tube" or "hard tube" without any ceremony.

The D-21 is quite small but is surrounded by a frosted glass shell (not air tight) which shields the tube itself from draughts, steady temperature being important.[1] The inner glass shell is the vacuum tube proper — it is sealed in the usual fashion and contain the grid, filament and plate. Also the "heater" is wrapped around it.

All four of the these things are different from the devices found in the more common varieties of tubes. The heater is connected in series with the tantalum filament and serves to warm up the tube so as the keep up the best temperature for tube operation. This is necessary because the tube contains sodium vapor. When the tube is turned on the filament at once glows bright yellow, the heater warms up more gradually and after a minute or so the tube is in operating condition. The frosted glass outer shell then prevents sudden changes of temperature. The grid is made of wires spot-welded together into a tiny spuirrel cage. The plate is not a plate at all, but a larger squirrel cage of the same sort, located so that its wires come between those of the grid.

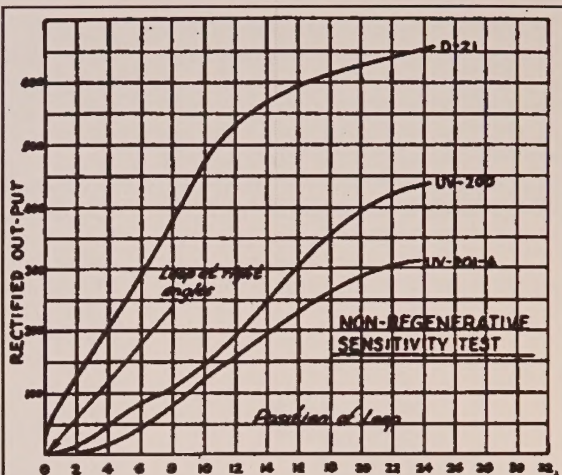
The D-21 tube can be used as a non-regenerative detector, as a regenerative detector and as an oscillating detector. Since the tube is pumped to a "hard" vacuum there is no need for critical adjustment of the plate and filament voltages.

When used in the first detector socket of a superheterodyne receiver for telephone work they showed very fine sensitivity. On very weak signals they proved very much better than any one of six UV-199 tubes and a trifle better than any one of three UV-201A tubes. When strong signals were being received the UV-201A tubes seemed to have the advantage, the UV-199 choking up entirely while the D-21 stayed clear but did not give as strong signals as the UV-201A.

On the whole the honors were with the D-21, it was most sensitive where sensitivity was most needed — one on weak signals, also the adjustments were entirely uncritical.

In summary: It will be seen from these tests that the general effect was to make the D-21 seem an excellent device for use as a detector in non-oscillating radiophone reception, giving the best performance on weak signals but acting very well indeed on strong signals. As an

amplifier(R.F. or A.F.) it was not a success, nor was it particularly encouraging as a C.W. detector.



**SENSITIVITY TEST OF THE D-21 TUBE
IN A NON-REGENERATIVE LOOP SET**

Referring to the lower [horizontal] scale of the curve, when the loop is in the position "O", it is at right angles to the line of transmission; therefore it is collecting only a very little energy from the passing ether wave and this very little is due only to accidental antenna effect. For practical purposes we can say that in this position the loop collects no energy. Going to the right along the scale the larger figures indicate that the loop has been turned thru a greater and greater angle, approaching the line of transmission. Unfortunately the scale on the loop was an arbitrary one and did not indicate angles directly. However the divisions were even.

[1] It is also believed that the outer glass of the tube with its frosted appearance was to disguise the unconventional construction, but gave the tube a more normal tube appearance when compared to the other tube marketed at the time.

Ref.: Gerald Tyne, "Saga of the Vacuum Tube", 1977, pp 336-340.

OST, December, 1924.

verbal contact with Alan Douglas, Wendell Wyborny.
Radiograph by Norman Ruffino

Lee DeForest

Story by Howard J. Lewis

Lee De forest (conclusion) reprinted from National Geographic

If Lee ever felt regrets, he never acknowledged them, although his years at Yale-supported by an endowed scholarship were not marked by complete success. His diary records the keen disappointments of a student who aspired to win \$50,000 by designing a novel underground trolley system, and to become editor of the campus magazine. He succeeded only in being voted by his fellow seniors as the nerviest and homeliest man in the class. Passed over in elections to the honorary scientific society of the Sigma Xi, he wrote in his diary "...I shall show them some day what a mistake they made. I will honor them and not they me!

Nevertheless, de Forest chose to remain at Yale for a Ph.D on the mysterious electromagnetic waves discovered in 1887 by Heinrich Hertz. During seven long months in a cold cellar laboratory, de Forest fretted over the erratic nature of a new device designed to detect these waves. It was the Branley coherer, named after its French inventor, and a critical link in the wireless telegraphy system of Guglielmo Marconi. De Forest thought he could do better.

He wasted little time in setting out to prove it. Within three years of his Ph.D., The American De Forest Wireless Telegraphy Company had shown itself capable of sending the dot-dash wireless messages at least six miles. The infant company procured several lucrative military contracts, but de Forest's ambition had already raced far ahead. In February 1902 he wrote:

"I shall move all heaven and earth to put in at once a broad fundamental patent on telephony without wires by Hertzian waves."

Meanwhile, new commercial areas waited to be pioneered. And wireless pioneering in the new century required the characteristics needed to open the new continent - courage, intelligence and stamina. Of his attempt to establish commercial communication over 180 miles of ice and frozen ground between Cleveland and Buffalo in the bitter winter of 1904, de Forest wrote: "I shall never forget the icy dreariness of the lonely location...the agony of raising again and again that fan aerial after sleet had piled it and the stiffened hemp halyards an inch thick in ice..." He even recorded that the flapjacks were so leathery he was able to paste stamps on one and mail it to New York City.

Much of the transmitting equipment was treacherous. The only method of generating Hertzian waves was still that used by Hertz—an electrical spark. To cross great distances required great sparks and that meant powerful transformers and condensers to store current. The condensers were liquid-tight boxes 7 feet long and 2-1/2 feet in cross-section, built of 2-inch planks. These were filled with kerosene and lined with racks separating large glass plates, each plate with heavy tinfoil fixed to both sides. A typical series of condensers consisted of four to six of these tanks, each weighing about a ton.

The entire apparatus was likely to explode in an instant of miscalculation, smashing the plate glass and

spraying kerosene over the room and its occupants. When the condensers were operating, an elbow or head that came too close often met a stunning bolt of electricity. And the sparks generated the acrid smell of ozone to mix with the always present kerosene fumes.

Although de Forest recalled this as a period of systematic growth and development, his system itself was not flourishing. What he had not yet found was a completely reliable detector to replace the Branley coherer.

That search was preoccupying not only de Forest but also Marconi and a host of would-be inventors in England, Germany, France and Russia. Every conceivable principle and effect was tested, whether understood or not.

The detector that survived can be traced to the day in 1883 when Edison put a metal wire electrode with a positive charge into his light bulb. He discovered that electricity flowed from the glowing filament to the new electrode across the space between them. Twenty years later John Ambrose Fleming, a British scientist serving as a consultant to Marconi, discovered that the "Edison effect" bulb could detect Hertzian waves in a completely new way. It was the first radio vacuum tube, the diode.

De Forest began experimenting, at that time with a simple detector that contained a glass flame instead of an electric filament. In addition, he used a telephone receiver with a battery of its own and clearly heard the dot-dash wireless signals from a distant transmitter.

With laborious trial and error he added these two items to Fleming's diode. Later he tried a zigzag grid of wire between the filament and a metal-plate electrode to carry the incoming signal. And so de Forest made the first triode, patented January 15, 1907. He called it the "Audion" and - in retrospect - "the granddaddy of all the vast progeny of electronic tubes that

have come into existence since."

But the progeny were not immediately forthcoming - partly because no one quite understood how the audion really worked. Some gases remained in the tube's partial vacuum. To de Forest, it seemed that the current could only flow from filament to plate through a transporting medium the ionized gases. It was an obvious explanation and incorrect.

By 1912 it had become clear to a number of investigators, including the distinguished researcher Irving Langmuir of General Electric that the gases were unnecessary. The filament emitted electrons particles with a negative charge and the plate with its positive charge attracted them. Now it was evident that high vacuum tubes would be far more efficient than the "soft" gassy tubes used by de Forest.

These new tubes permitted new experiments. De Forest and others discovered that with simple changes in circuitry the audion could amplify feeble electrical currents, thus immensely improving long-distance telephone transmission. But the really earth-shrinking properties of the audion were not revealed until August 1912, when de Forest found that with more complicated changes in the circuits he could obtain a range of musical tones in the receiver. He had added a "feedback" interconnection between the input and output circuits and created what radio engineers call regeneration.

It was this single, completely unexpected result of an afternoon's tinkering that created the broadcast industry.

What de Forest had discovered was a very efficient method of producing continuous electromagnetic waves that could be modulated to carry the entire range of audible sound. The search for such a transmitter had been intense - for so long as transmission depended on spark gaps, wireless communication was limited to the dot-

dash of the Morse code.

To Parallel the leap from Morse to Alexander Graham Bell, to move from wireless telegraphy to wireless telephony (radio, to Americans), required continuous-wave transmission.

It was de Forest's audion that carried wireless from Marconi's faint dit dat to Arturo Toscanini's "Symphony of the Air". It also provided the basis for one of the most protracted patent litigations in United States history.

In the stampede of invention that marked the early years of wireless, the regenerative circuit was discovered independently, within less than two years, by an Austrian, a German, and two Americans. One of the latter was Edwin H. Armstrong, a quiet spoken man with a lumberjack's physique, who later developed FM. It was he who gave de Forest a tussle.

The battle began when it was declared that several patent applications including de Forest's and Armstrong's were in interference with each other. The first round went to Armstrong in 1923, the second to de Forest on appeal. And so the battlers swung away for ten long years, until finally, the case reached the Supreme Court. Although most foreign governments award patent rights to the first applicant, the United States seeks to award them to the first inventor, whether or not he outlegged the competition to the Patent Office. It thereby imposes on the judicial system the awesome requirement that individuals trained in the law make final judgement in some highly arcane areas of science and technology.

Such was the issue in *Radio Corporation of America vs Radio Engineering Laboratories, Inc.* When all the circuits had been laboriously traced and understood the Justices returned to crucial testimony for their decision. Armstrong had sworn that he had made his apparatus "about the first of October 1912". De Forest had sworn that his notebook's first description

of the "so-called feedback circuit" was dated August 29, 1912.

On May 21, 1934, the Supreme Court found for the de Forest patents and nearly two decades of work, pleading bitterness and hope came to a close. In 14 years of litigation, the claims of de Forest had been upheld by seven courts, those of Armstrong by six.

All those years of running and it took the Supreme Court to say he had won. He had seen his inventions bring immense fortune to others, but not to himself. The professional glory he had striven for came to him dimmed by endless disputes over priority and business deals. An almost hopeless romantic, he had suffered two broken marriages.

And yet his unflagging energy and unquestioning enthusiasm propelled him into new pioneering challenges the development of talking pictures, television and finally, shortwave therapeutic devices. But each time he took his own course and found himself alone. In his lifelong drive to outrace the competition, had he outraced life itself?

Not quite. At the age of 57, de Forest met a young movie actress, Marie Mosquini, and after six weeks' wooing, entered into marriage a third time. He had found the long-awaited companion who shared his deep love of music, poetry and the beauty of the outdoors. They took long camping trips in state and national parks. De Forest spent less time in the laboratory and more in front of a massive high-fidelity phonograph he constructed for sheer enjoyment. Radio gave him less pleasure, he detested its average programs and crass commercials.

But when he wanted to regain the heights, there was always Mount Whitney. He celebrated his 70th birthday by climbing it for the fifth time. In 1961 at the age of 87, he concluded the robust twilight of his life.

Amendment Proposal

By Gordon Rolston

Two amendment proposals were submitted by Gordon Rolston at the July general meeting. The first amendment proposed that the reduced fee for out-of-town members be deleted so that all members would pay the same dues to support the Grid Leak. The second amendment proposed changing the current one year term of officers to two year terms and alternating terms such that only half of the position terms would expire each year.\

The two proposals were discussed during the July meeting. There was some opposition to the proposal to change the dues structure and it was requested that the proposals be placed on the August agenda for further discussion. Both of the proposals will be discussed at the August general meeting and if a motion is received for a vote, the general membership will determine whether or not to accept one or both of the amendments.

AMENDMENT PROPOSAL #1

Change Article III, Section 3, which now reads:

"Annual membership dues will be set by the Executive Board for local residents (those living within 75 miles of HOuston) with proration for new members, and a reduced fee for nonvoting out-of -town residents with no proration. The fiscal year begins in May."

Over the past three years the Executive Board has been discussing the cost of the newsletter/Grid Leak, including postage, versus the dues received from out-of-town members who receive a discounted membership rate. As the postal rates and printing costs have both increased over the past three years, a change in the dues fee to out-of-town members may become a financial necessity.

To this writer's knowledge, HVRA is the only radio organization which has a reduced fee for its out-of-town members. The Executive Board may in the future wish to raise both local and non-local rates. As the current Bylaws read, local and non-local rates can not be the same.

Proposal #1 would amend Article III, Section 3 to read:

"Annual membership dues will be set by the Executive Board."

The deletion of a majority of Section 3 would give the executive board greater flexibility in changing the fee structure and renewal date.

This was submitted to the members of the HVRA in attendance at the regular monthly meeting held on July 2, 1991.

AMENDMENT PROPOSAL #2

Change Article V, Sections 1 &2, which now read:

Section 1. "The officers of the Association shall consist of a president, a vice president, a secretary, a treasurer, a historian, an editor and two representatives at large. All officers shall be at least 21 years of age and be members in good standing."

Section 2. "All officers with the exception of the Editor, shall be elected at the Annual Meeting in September and will continue in office through the next Annual Meeting an election."

Each year HVRA goes through the process of locating willing candidates for each of the elected office positions. When officers choose not to run for re-election, this process becomes an even more difficult task. A second concern has been expressed in that the annual elections in which officers are changed, causes a loss of continuity in the operation of the Executive Board from year to year.

This amendment will change the term of office from a one year to a two year term. The various officers will be divided into two groups such that each group will be elected every other year. Thus, only half of the officers of the Executive Board will be changed each year. This will provide for a smoother transition of the Executive Board each year.

Proposition #2 will amend Article V, Sections 1 & 2 to read as follows;

Section 1. The officers of the Association shall consist of a president, a vice president, a secretary, a treasurer, a historian, an editor,

two representatives at large **and all other officers as may be created by the association.** All officers shall be at least 21 years of age and be members in good standing.

Section 2. All **elected officer positions, in which the term has expired,** shall be elected at the Annual meeting in September.

Proposition #2 will also add Article XII which will state the term of officers and give the Executive Board the authority required to implement the term changes in order to divide officer positions into two election periods. This will also apply to any new positions that may be created by the Association in the future.

Article XII will read as follows:

ARTICLE XII-ELECTION OF OFFICERS

Officers shall be elected for a term of two years. The terms of each officer shall be implemented in such a manner that approximately one-half of the officer's terms will expire each year. An elected position may be temporarily set to a one year term by the Executive Board so as to promote a numerical balance of elected officers between alternate years.

The above proposal was also submitted to the members of the HVRA at the regular monthly meeting in July.

The Swap Shop

Submit ads by the 15th of each month

FOR SALE

FOR SALE: 45 min video tape of RCA "His Master's Voice" and early radio "Music in the Sky"; Two excellent early 1930's documentaries; \$19.95 ppd; Gene Tognacci, 12507 Nova Dr., Houston, TX 77077; 713-496-2358.

FOR SALE: Galena crystal receivers and parts. Write for details. Very sensitive and selective circuit developed. Also reasonable priced radio parts, some modern, some old; L. Gardner, 458 Two Mile Creek Rd., Tonawanda NY 14150; 716-873-04547.

FOR SALE: RCA Victor 8x541 brown plastic, louvered grill, works \$37; Zenith 5D810Y, black plastic, wks, \$35; GE Clock radio, model 50, wks, \$45; Philco, 46-1203, radio-phonograph, radio wks, \$45; RCA 9X641, brown plastic, slanted top, louvered grill, wks \$35; RCA 66X3 dark wood, Zebra skin cloth skinner cover, wks, 40; GE model 102, round top, brown plastic wks, \$38; Musicaire, 212T, wood refinished, wks, \$40; Sentinel 127BT200S, wood, battery set, \$40; Zenith, S-46917, wood, AM-FM, wks, \$35; Admiral 5K1, wood, superaeroscope,

some loose veneer, wks, \$35; Philco 41-844, breadbox roll-top cover, wks, \$60; Firestone, S-7426-8, wood, very nice, wks, \$125; Zenith G-724, plastic, wks, \$60; Philco model 65, high boy evergreen speaker cover, veneer rippled, plays very well, \$300; AK 510 console, 5 dial (no match) works well but dial string needs replacing, \$125; Silvertone 132.066, brown plastic, clock radio, wks, \$35; Del Tysdal, 812 Broadway, #4, Fargo, ND, 58102, 701-293-9328 [b-2]

FOR SALE - TRADE: List 91-1 for large SASE. Included literature, microphones, military receivers & parts, early radio batteries, light bulbs, misc.; George Potter, 2069 Sienna Trail, Lewisville, TX 75067; 214-315-2553. [b-2]

FOR SALE: Several large ornate turn of the century electrical meters, \$10-40 ea; small solid brass, 19th century Queen & Co., hand operated vacuum pump \$55; 1920 Thompson high torque induction test meter, nickel plated face on bakelite panel, golden oak case, \$45; Kodak slide viewer w/7.5" ground glass viewing screen, \$20; 5 Edison batteries, \$20 ea, all for \$75; small Victor talking machine monograph, \$60, needs restoration; ornate glass mercury arc rectifier, circa 1901, \$60; Frank Cooper, 4215 Ravine

Dr. Friendswood TX 77546; 713-482-6781 [b-2]

FOR SALE: Communication receiver manuals - Hallicrafters, National, Hammerland, etc; Michael Payne, 803 S. Taylor, Alvin, TX 77511, 713-331-9217 [b-2]

FOR SALE: Zenith R7000 transoceanic, new in box \$310 plus shipping; Del Tysdal, 812 Broadway, Fargo, ND 78102; 701-293-9328. [a-2]

FOR SALE: Delco R1120 AC radio, \$45 plus shipping; R2050 for battery with solid state power supply and spare tubes, all for \$ 150; Laurence Cowles, 5420 Braeburn Dr., Bellaire, TX, 713-668-3789; [a-3]

FOR SALE: Lots of radio knobs, tubes, dials, new purchase grill cloth; restored radios, telephones, phonographs, records; telegraph to television; Vintage Sounds at the Trade Mart 2121 Sam Houston Pky N. , 713-468-4911. [b-2]

FOR SALE: Microni Wireless Telegraph Co. stock certificate, \$12 ppd; **WANTED:** Weston type 891 meter for parts; L. Gardner, 458 Two Mile Creek Rd., Tonawanda, NY 14150; 716-873-0447 [b-2]

FOR SALE: Victor Orthophonic phonograph model 8-12, rarer and a bit smaller than the credenza, absolutely mint cond., \$850; AK model 40, in rare Pooley cabinet, with horn

spk, \$200, excellent; restored Philco console radio model 118 (19310, \$175; Richard Collins, 8722 Reamer St., Houston, TX 77074; 713-778-0271, [a-2]

FOR SALE: Edison patent Ni alkaline batteries , rechargeable 5 cell units, great for radio A/C batteries, recharge using standard auto battery charger; Bob Botto, 3505 Del Sur Dr., Baytown, TX 77521; 713-468-4911; [a-2]

FOR SALE: Okidata 93 dot matrix printer, wide carriage, w/cable; excl cond. \$90 plus shipping; David Moore, 3213 Regal Oaks, Pearland, TX 77581; 713-485-0503.

WANTED

WANTED: Two 15" woofers and horn tweeters that were sold at the April HVRA meeting; Merle Fulton, 334-1090 eve, 483-1663 days.

HELP WANTED: Need help identifying & determining purpose of device called "The Famous Wonder Tone", in a round metal box 4" dia. by 1 3/4" high. Two screw terminals & single knob on top. Cherups & floral design on label. Make offer if you want it or trade; Jerry Dunn, 300 Strand, Apt 412, Galveston, TX 77550, (409) 762-9248, [b-2].

NEED crank-up phono parts or all; David Reekie, 1812 Barbara Ln, Pasadena, TX, 77502, 713-473-3254 [a-2]

NEED tone arm to electric pickup for 1929 Brunswick MDL 31S Panatrope with radio, Garry Greco, 409-297-6759, [a-1]

WANTED: Schematic for Radio City Products tube tester, model 807; Jim Moffett, 218 Shannon Lee Dr., San Antonio, TX 78216; 512-826-4938 [b-3]

WANTED: Book - "Collecting Old Radios and Crystal Sets" by Max Alth, Published in the late 1970's; Todd F. Breed, 2800 NASA Rd. One, #414, Seabrook, TX 77546; 713-532-1510. [b-2]

WANTED: Magnovox R-3 speaker, complete or just the bell; Billy Richardson, P.O. Box 4028, Liberty, TX 77575, 409-336-8682. [b-2]

WANTED: Model 615 adaptor and instructions for EICO model 667 tube tester; dial glass & pointer for AK model 145; AK model 37 (rough) trade for Arvin model 502; Roger Shannon, Rt 4, Box 1450 Woodlane, Splendora, TX 77372, 713-689-5020. [b-4]

WANTED: Top "acorn" nut and one knob for a Colonial "New World" Globe radio; will pay your price; Sam Juliano, 15718 Falmouth Dr., Houston, TX 77059; 713-486-8726 [b-3]

WANTED: AK 3 tube TA unit and AK coupled circuit tuner; Earl

Stump, 15 North May Ave., Athens, Ohio 45701, 614-6420. [b-2]

WANTED: For Capehart radio model 410M- automatic record changer, tuning eye, # 6AF6G; extended or remote control, brass identification plate; need schematic diagram for Stromberg Carlson TV-radio, TC-19-M5M; Alan Douglass, 947 Merrill, Houston, TX 77009; 713-861-9428; [a-2]

NEED info or source for old radio parts - I am collecting various old radios & repair, John Maher, Jr. 713-893-7766 [a-1]

NEED Philco 70 chassis & speaker, will pay \$100 for chassis in good condition with speaker; **FOR SALE:** AK 20 big box junker - \$20; W.C. Kendrick, 1126 Fay, Kemah, TX 77565; 713-334-4086, [a-2]

WANTED: Blue colored radios, Raytheon transistor radios, also want sony TR-63; Preston Meeks, 2811 Kenross, Houston, TX 77043, 713-460-5369; [a-2]

Telegraph to Television and everything in between at Vintage Sounds in the Trade Mart, Sam Houston Tollway at Hammerly; open Fri, Sat Sun, 10-6, Monday by appointment; 713-468-4911; [a-1]

NEW BOOKS

The following books will soon be available antique radio buffs:

CRYSTAL CLEAR, a book on early crystal detectors and crystal sets, Aug. 1991, Vestal Press

RADIO MANUFACTURES of the 1920's, Vol. 3, by Alan Douglas,

R thru Z, available at AWA, Rochester, NY, late Sept., Vestal Press

EMPIRE OF THE AIR, THE MEN WHO MADE RADIO, by Tom Lewis, the story of three radio pioneers: Lee deForest, Edwin Armstrong, and David Sarnoff, \$25, available at AWA at disc.

LOOKING AHEAD

HVRA radio display, Mall location is not determined, Sept 21 date has been set for Alameda Mall. Members will be able to sell radios to the public in our "Retail" dept.

Aug. 8-10 RadioFest 91, Elgin, IL, Holiday Inn (708)695-5000; Events: Auction, Special Exhibit, 3-day flea market, old equipment contest, banquet, Ralph Muchow's Radio Museum; for details call Dave Johnson 708-484-2743.

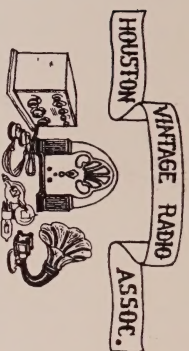
Sept. 14 Steam-Up; New England Wireless and Steam Museum, East Greenwich RI.

Sept. 25-28 Antique Wireless Association Convention, Rochester NY. Marriott Hotel, Events: huge flea market, 4 auctions, 2 banquets, old equipment contest, seminars, AWA Museum. contact Dave Moore for more details, 713-485-1705.

Oct. 20 Kansas City flea market and auction, contact Bill Moore for more details

Oct. 26 HVRA flea market and picnic, location to be decided.

Nov. 8-10 VRPS-AWA annual convention, (new location) DFW Holiday Inn. More details later.



Houston Vintage Radio Assn.
P.O. Box 31276
Houston, TX 77231-1276

FIRST CLASS MAIL

Address Correction Requested